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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## MOLYBDENUM IN NOVEMBER 1997

Domestic production of molybdenum in concentrate decreased 6% in November 1997 compared with that of the previous month and was 9% more than in November 1996, according to the U.S. Geological Survey. Producer molybdenum stocks in concentrate, oxide, and other product forms were 8,250 metric tons at the beginning of 1997 and 10,200 metric tons at the end of November 1997.

Included in this Mineral Industry Surveys are U.S. production, shipments, and stocks of molybdenum concentrates and materials, plus U.S. consumption by end use of molybdenum in the previous and current months. Also included are trade data for the previous 2 months. During the current month, Platt's

Metals Week U.S. monthly average price for molybdenum concentrate was \$4.960 per kilogram (\$2.250 per pound). The average price for dealer molybdenum oxide was \$8.157 per kilogram (\$3.700 per pound) and that for dealer ferromolybdenum was \$11.078 per kilogram (\$5.025 per pound).

For the week ending January 23, 1998, Metals Week U.S. average price for molybdenum concentrate was \$4.960 per kilogram (\$2.250 per pound). The average price for dealer molybdenum oxide was \$8.135 per kilogram (\$3.690 per pound) and that for ferromolybdenum was \$11.188 per kilogram (\$5.075 per pound).

TABLE 1  
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS 1/

(Metric tons, contained molybdenum)

	1996	1997		
		October	November	Year to date
Production	56,000	5,150	4,820	55,900
Shipments: 2/				
Domestic	16,100	1,090	1,090	11,500
Export	19,700	1,580	1,200	18,400

1/ Data are rounded to three significant digits.

2/ Includes molybdic oxides, metal powder, ammonium molybdate, sodium molybdate, and other.

TABLE 2  
U.S. REPORTED PRODUCTION AND SHIPMENTS OF MOLYBDENUM PRODUCTS 1/

(Metric tons, contained molybdenum)

	1996	1997		
		October	November	Year to date
Gross production	46,300	4,390	4,160	44,400
Internal consumption 2/	23,900	1,860	2,040	21,100
Gross shipments	24,100	2,260	1,840	24,100

1/ Data are rounded to three significant digits.

2/ Includes molybdic oxides, metal powder, ammonium molybdate, sodium molybdate, and other.

TABLE 3  
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS 1/ IN 1997

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molybdenum 2/	Ammonium and sodium molybdate	Molybdenum scrap	Other	Total
October:						
Steel:						
Carbon	58,600 r/	W	--	--	3,190	61,800 r/
High-strength low-alloy	52,800 r/	9,330 r/	--	--	--	62,100 r/
Stainless and heat-resisting	232,000 r/	24,800 r/	--	--	4,700	262,000 r/
Full alloy	222,000 r/	142,000 r/	--	--	2,330	366,000 r/
Tool	86,600 r/	7,680	--	--	2,310	96,600 r/
Total	653,000 r/	183,000 r/	--	--	12,500	849,000 r/
Cast irons (gray, malleable, and ductile iron)	1,670	110,000 r/	--	--	763	113,000 r/
Superalloys	84,700 r/	W	--	56,400 r/	45,500	187,000 r/
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	(3/)	285	285 r/
Other alloys 3/	--	W	--	534 r/	6,150	6,690 r/
Mill products made from metal powder 5/	--	--	--	--	179,000 r/	179,000 r/
Cemented carbides and related products 6/	--	--	--	--	18 r/	18 r/
Chemical and ceramic uses:						
Pigments	--	--	985	--	--	985 r/
Catalysts	77,300	--	(7/)	--	87,300 r/	165,000 r/
Other 7/	(9/)	--	--	--	3,130 r/	3,130 r/
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	(10/)	--
Other	--	35,900 r/	(10/)	--	15,600 r/	51,500 r/
Grand total	816,000 r/	330,000 r/	985 r/	56,900 r/	351,000 r/	1,550,000 r/
Stocks, October 31, 1997	585,000 r/	431,000 r/	10,700 r/	54,000	801,000 r/	1,880,000 r/

See footnotes at end of table.

TABLE 3--Continued  
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS 1/ IN 1997

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molyb- denum 2/	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
November:						
Steel:						
Carbon	41,600	W	--	--	3,190	44,800
High-strength low-alloy	49,600	8,930	--	--	--	58,600
Stainless and heat-resisting	229,000	25,400	--	--	4,700	259,000
Full alloy	183,000	174,000	--	--	2,330	360,000
Tool	67,200	8,480	--	--	2,310	78,000
Total	571,000	217,000	--	--	12,500	800,000
Cast irons (gray, malleable, and ductile iron)	1,670	46,300	--	--	763	48,700
Superalloys	W	W	--	(11/)	85,800	85,800
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	285	285
Other alloys 3/	--	W	--	534	6,150	6,690
Mill products made from metal powder 5/	--	--	--	--	228,000	228,000
Cemented carbides and related products 6/	--	--	--	--	19	19
Chemical and ceramic uses:						
Pigments	--	--	982	--	--	982
Catalysts	77,300	--	(7/)	--	87,300	165,000
Other 7/	W	--	--	--	2,330	2,330
Miscellaneous and unspecified uses:						
Lubricants	--	W	--	--	(10/)	12,100
Other	80,600	37,400	(10/)	--	15,400	133,000
Grand total	730,000	301,000	982	534	439,000	1,470,000
Stocks, November 30, 1997	588,000	223,000	10,700	40,700	808,000	1,670,000

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Other" of the "Miscellaneous and unspecified uses" category.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes calcium molybdate.

3/ Revised to zero.

4/ Includes magnetic and nonferrous alloys.

5/ Includes ingot, wire, rod, and sheet.

6/ Includes construction, mining, oil and gas, metal working machinery.

7/ Included in "Catalyst: Other."

8/ Includes ground coat, glass, silicone, electroplating, and drier in paint or related uses.

9/ Included in "Chemical and ceramic uses: Other: Other."

10/ Included in "Miscellaneous and unspecified uses: Other: Other."

11/ Included in "Superalloys: Other."

TABLE 4  
U. S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES  
(Including roasted concentrate), BY COUNTRY 1/

(Kilograms, contained molybdenum)

Country	1996	1997		
		September	October	Year to date
Australia	30,900	9,800	--	71,900
Belgium	12,400,000	496,000	1,000,000	11,900,000
Brazil	20,400	--	18,800	51,200
Canada	268,000	64,600	65,200	445,000
Chile	6,990,000	368,000	731,000	5,280,000
China	1,290,000	--	--	313,000
France	5,620	--	--	143
Germany	505,000	18,100	240,000	736,000
India	58,600	--	--	--
Italy	384,000	19,000	57,100	270,000
Japan	5,140,000	218,000	663,000	5,060,000
Korea, Republic of	10,200	--	--	272
Mexico	5,500,000	727,000	778,000	4,900,000
Netherlands	5,890,000	1,460,000	1,610,000	13,900,000
Spain	19,900	18,400	18,600	121,000
Sweden	473,000	102,000	114,000	822,000
United Kingdom	6,010,000	485,000	705,000	4,600,000
Other	--	--	--	9,870
Total	45,000,000	3,980,000	6,010,000	48,500,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 5  
U. S. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY 1/

(Kilograms, contained molybdenum)

Country	1996	1997		
		September	October	Year to date
Australia	--	--	--	546
Canada	252,000	23,500	63,900	411,000
China	--	2,950	14,100	17,200
Italy	--	--	--	3,170
Japan	117,000	5,340	--	41,700
Korea, Republic of	1,910	--	--	1,970
Malaysia	37,200	--	--	--
Mexico	117,000	5,420	4,530	98,200
Singapore	53,900	--	--	--
Spain	1,160	--	--	--
Taiwan	--	--	--	10,600
Venezuela	1,090	--	--	--
Other	--	--	182	182
Total	581,000	37,200	82,800	585,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS 1/

(Kilograms unless otherwise specified)

Material	1996			1997		
	January-December			January-October		
	Gross weight	Contained molybdenum	Value (c.i.f.) (thousands)	Gross weight	Contained molybdenum	Value (c.i.f.) (thousands)
Ore and concentrates roasted	8,090,000	3,460,000	\$41,300	6,790,000	4,230,000	\$41,500
Ore and concentrates other	35,600	21,100	173	1,950,000	1,030,000	7,400
Molybdenum chemicals:						
Oxides and hydroxides	1,160,000	NA	8,850	1,290,000	NA	10,400
Molybdates of ammonium	665,000	368,000	5,360	671,000	366,000	5,390
Molybdates (all others)	82,500	36,400	506	175,000	110,000	1,020
Molybdenum orange	1,840,000	NA	5,710	1,430,000	NA	5,120
Mixtures of inorganic compounds	--	--	--	--	--	--
Ferromolybdenum	7,870,000	4,960,000	55,100	4,640,000	2,890,000	29,500
Molybdenum powders	125,000	110,000	3,470	64,600	57,200	2,230
Molybdenum unwrought	91,100	84,400	2,380	295,000	275,000	4,200
Molybdenum waste and scrap	693,000	640,000	9,720	501,000	492,000	8,060
Molybdenum wrought	--	--	--	--	--	--
Molybdenum wire	1,990	NA	320	3,340	NA	408
Molybdenum other	3,870	NA	1,060	5,390	NA	1,020
Total	20,700,000	11,700,000	134,000	17,800,000	9,450,000	116,000

NA Not available.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.